SP-R9 Existing Recreation Use Study

January ~~10~~16, 2002

1.0 Introduction/Background

This study will focus on determining existing recreation use within the Study Area. As required by the Federal Energy Regulatory Commission (FERC) this study will provide information necessary for other recreation studies, such as SP-R 8—Carrying Capacity. Current information on existing recreation use within the Study Area is included in Attachment A. These current sources of information will be used to identify previous trends in use, identify possible methods for collecting use data, and to note any shortcomings from previous studies.

2.0 Study Objective

The main objective of this study is to estimate existing project-related recreational use (both day use and overnight use). The study will estimate use at recreation facilities, dispersed recreation use areas, and will focus on activities within the Study Area.

3.0 Relationship to Relicensing/Need for the Study

This study is needed because FERC regulations require estimates of existing and future recreation use at the project, in terms of daytime and overnight visitation, as well as a description of the methods used to estimate use (Subpart F, Section 4.51 of 18 CFR). This study addresses Issue Statement R1—adequacy of existing project recreation facilities, opportunities, and access to accommodate current use and future demand, and the following specific Issues: RE 1, 2, 5-17, 19-39, 55, 56, 60, 64-83, 95, 96, 104, 105, 118-130, 132-145, 147, 150, and 151.

The most recent comprehensive use study was conducted in 1996 (Guthrie et al. 1997) by Chico State University. Researchers estimated visitor days and activity participation for 15 recreation areas. Both roving and fixed position vehicle counts were conducted. No visitation data were collected during low attendance months, nor was there any attempt made to validate observers' vehicle counts with traffic counter data. Rischbieter (2001) summarized traffic counter data for 1995-2000. This effort confirmed there is boating and camping use year-round.

4.0 Study Area

The Study Area includes Lake Oroville, the lands and waters within and adjacent to (1/4 mile) the FERC project boundary, and adjacent lands, facilities, and areas with a clear project nexus. Specific areas where use counts will most likely be conducted are listed below. These areas will be reviewed during a preliminary field visit to determine if there are any operational or logistical constraints that need to be considered. Use levels at Boat-In Campsites (BICs) will be addressed in SP-R7—Reservoir Boating Survey.

Campgrounds

Bidwell Canyon Campground	Floating Campsites
Bloomer Cove Boat-In Campsite (BIC)	Lime Saddle Campground
Bloomer Knoll BIC	Lime Saddle Group Campground
Bloomer Point BIC	Loafer Creek Campground
Bloomer Group BIC	Loafer Creek Group Campground
Craig Saddle BIC	Loafer Creek Horse Campground
Foreman Creek BIC	Oroville Wildlife Area (OWA) (Larkin Road Camping Area)
Goat Ranch BIC	North Thermalito ~~North~~ Forebay RV "en route" Campground

Day Use Areas (DUAs)

Lake Oroville Visitor Center	Saddle Dam DUA
Lime Saddle DUA	North Thermalito ~~North~~ Forebay DUA
Bidwell Canyon DUA	South Thermalito ~~South~~ Forebay DUA
Loafer Creek DUA	Thermalito Afterbay DUA (off Highway 162)
Oroville Dam Overlook Area	Thermalito Afterbay Wilbur Road DUA
Spillway DUA	Thermalito Afterbay Larkin Road DUA
	Burma Road and Lakeland Boulevard DUA
Riverbend DUA	Oroville Wildlife Area

Boat Launches

Lime Saddle Boat Launch Area (BLA)	Foreman Creek Car-Top BLR
Loafer Creek BLA	Dark Canyon Car-Top BLR
Bidwell Canyon BLA	Stringtown Car-Top BLR
Enterprise Boat Launch Ramp (BLR)	Vinton Gulch Car-Top BLR
Nelson Bar Car-Top BLR	Thermalito Afterbay
South Thermalito ~~South~~ Forebay	North Thermalito ~~North~~ Forebay
Diversion Pool-Burma Road and RR Grade	
Riverbend boat launch	OWA

Other Recreational Facilities with Project Nexus

Lime Saddle Marina	Bidwell Marina
Floating Restrooms	Aquatic Center
Brad P. Freeman ~~Bicycle~~ Trail	Feather River ~~Fish~~ Hatchery
Lake Oroville State Recreation Area (LOSRA) Hiking/Equestrian Trail	Clay Pit State Vehicular Recreation Area (SVRA)
	Model Aircraft Flying Area
Diversion Pool	OWA

Clay Pit Shooting Area
Dispersed use areas along the ~~upper~~ upstream and ~~lower~~ downstream reaches of the Feather River

5.0 General Approach

Task 1—Preparation for Field Work

This task will involve logistical preparation for the study including: preparation of data collection forms; setting up databases; finalizing field work logistics; preparation of survey protocols; field crew training; selection of stratified random sampling dates; coordination with facility operators; and preliminary site visits to assess conditions for the surveys. A user count survey protocol will be prepared. Prior to developing the protocol, methods used in past existing recreation use studies will be reviewed. A detailed implementation schedule is found in Attachment C.

Training Field Staff. A field coordinator will direct all work involving the field crew. He or she will spend the majority of his or her time in the field training and monitoring staff, helping with logistical issues, and occasionally collecting data as needed. Field staff will, as much as possible, be hired from regions in local proximity to the Study Area.

It is anticipated that a field crew of five to seven individuals will be trained to support all the recreation field studies. Field staff will be trained in data collection protocols in late Winter or early Spring 2002.

Data QA/QC Procedures. The field coordinator will accompany the field staff on a selected number of visits to validate counts of cars, boats, trailers, visitors, etc. The field coordinator will also check the accuracy of data forms at end of each week. Once data sheets have been reviewed they will be entered into an Excel or Access database. This information will be analyzed and summarized. Persons-at-one-time (PAOT), a measure of peak use, will be estimated for holiday and non-holiday periods by site/use area in visits and Recreation Visitor Days (RVDs). An RVD is defined as 12 hours of use by any combination of users within a recreation area.

Sampling Schedule. Table 1 shows a tentative schedule of the number of days the team will monitor use. During a 12 month period, use will be monitored for a total of 50 days at campgrounds, and 43 days at dispersed and day use sites. Counting boats and counting use at BICs is not included in this study; these tasks will be conducted as part of SP-R7.

On days that use is monitored, field staff will conduct a series of vehicle counts, including equipment (e.g., boat trailers), observe whether or not the facility in question is below, at, or exceeding capacity, and observe recreation activities in process. Manual traffic counts will be conducted periodically at sites that have traffic counters for validation purposes, and regularly at sites without traffic counters. These data will be used to estimate seasonal visitation (Task 2). Information on whether use exceeds capacity will be used to complete Tasks 3 and 4. Recreation activity information will be used to complete Task 5. A sample recreation use form is attached (Attachment B).

Table 1
Tentative Sampling Schedule for Monitoring Visitor Use

Season	Day Use Areas			
	Developed	Dispersed	Camping area	Weekday/Weekend
Spring 2002				
May	6	6	10	Weekends
-Memorial Day Weekend	3	3	3	Only
Subtotals	9	9	13	
Summer 2002				
June	2	2	2	
July	4	4	4	5 Weekdays
-Independence Day	1	1	1	6 Weekend days
August	4	4	4	
Subtotals	11	11	11	
Fall 2002				
September	2		2	
-Labor Day Weekend	3		3	3 Weekdays
October	2		2	6 Weekend days
November	2		2	
Subtotals	9		9	
Winter 2002-2003				
December	1		1	
January	1		1	
February				Weekends
-Presidents' Day Weekend	3		3	Only
March	1		1	
Subtotals	7		4	
Spring 2003				
April	4		4	4 Weekdays
-Spring Break/Easter Weekend	3		3	3 Weekend days
Subtotals	7		7	
Totals	**43**	**20**	**43**	**50**

Task 2—Seasonal Visitation

This task will provide an estimate of day and overnight project-related annual recreation visitation to recreation sites and major recreation resources within the Study Area. Recreation visitation will be estimated in numbers of recreation visits (visits) and RVDs during the recreation seasons for each recreation area. A recreation visit is defined as a visit by one person to a recreation area for any portion of a single day.

Visitation will be estimated primarily by utilizing data from traffic counters located at each major recreation site, and by observations made regarding the average number of visitors per vehicle at each recreation site. Additionally, four infrared counters will be used to monitor trail use in several locations; locations will be determined in coordination with trail user groups. It is assumed that the majority of use counts will be derived from California Department of Water Resources' (DWR's) traffic counter data. DWR ~~expects to have~~has

traffic counters in place at all major facilities ~~by January 2002~~. Traffic data will be obtained through a monthly systematic check of traffic counters to estimate weekday and weekend visitation rates. DWR staff will read the counters during these intervals and keep a log sheet of the data. Once the traffic data have been obtained, the estimate of the number of visitors per vehicle will be used to determine total monthly use levels at each recreation site.

For areas where no traffic counters exist, anecdotal and/or secondary use information will be collected from on-site DWR project operators and/or DWR/California Department of Parks and Recreation (DPR) recreation facility managers or campground hosts. Occasional observational counts at these locations, depending on scheduling constraints and field crew availability, may also occur.

This information will be analyzed and summarized. Monthly and seasonal visitation numbers will be estimated by site or use area in number of visits and in RVDs. To determine RVDs, several estimates of the average length of stay will be made from information obtained in SP-R13—Recreation Surveys. This will allow a range of RVDs to be reported.

Task 3—Non-Holiday PAOT Use

To gather more specific information about the types of use occurring, vehicles will be observed at facility entrances with traffic counters on randomly selected days. Among areas receiving low use vehicles will be counted at one time during the day. Among areas receiving high use, two counts will be conducted to estimate turnover. This task will estimate people, vehicles and boat trailers, as well as the utilization (percentage of occupancy) of parking spaces, picnic units, overnight rental units, and campsites during peak use periods of non-holiday weekends. Dispersed fishing and day use will also be estimated at dispersed areas. The objective of this task is to determine if additional recreation facilities are needed in the Study Area based on the utilization of existing facilities and the use of informal recreational areas associated with the project. (Visitor activities will also be documented under Task 5.)

Non-holiday peak period PAOT use will be documented by researchers who will count the number of vehicles and boat trailers, as well as the number of occupied parking spaces, picnic units, and campgrounds at each site in the Study Area. Both weekends and weekdays will be sampled.

The number of occupied campsites will be obtained through secondary methods from site operators for pre-selected dates and timeframes. For locations where this information is not available, researchers will obtain the information on-site. Use counts at BICs will be addressed in SP-R7—Reservoir Boating Survey.

Table 1 shows the tentative sampling schedule. The schedule will involve collecting data primarily on weekends, since recreation use is typically highest during these times. However, during the Summer (Memorial Day to Labor Day) approximately the same amount of time will be spent collecting use data on weekends and weekdays. Researchers will travel by vehicle to each of the sites selected on a pre-selected random stratified date. Due to the large size of the Study Area, use will be documented at every site over a 2-day sampling period using multiple field staff. Selected sites will be sampled proportional to their use levels over the duration of the study. Day use sites will be sampled primarily during mid-afternoon periods, which are typically the times of maximum utilization. Some sites may be sampled earlier or later in the day based

upon site-specific use patterns. Estimated maximum utilization times for each site will be determined based on conversations with site operators and/or during preliminary site visits.

At sites with traffic counters, researchers will also observe vehicles entering each site on randomly selected dates to assist in determining the average number of visitors in each vehicle. At sites without traffic counters, field staff will manually count vehicles each time they visit the site. This figure may be higher than the average group size per vehicle during non-peak times. Additionally, this will allow the team to validate the average group size information obtained by Guthrie et al. (1997). This information will be used to estimate seasonal visitation as outlined in Task 2.

For dispersed sites, vehicle counts at trailheads and estimated vehicle occupancy rates may be used to count and estimate visitors in hard to access areas. Counts at dispersed sites will not occur during Winter.

This information will be analyzed and summarized. PAOT non-holiday visitation numbers will be estimated by season, and site or use area, in visits and in RVDs.

Task 4—Holiday PAOT Use

This task will be identical to Task 3, except that it will focus on holidays. Task 3 only focuses on normal peak season times. Both weekdays and weekend time periods will be sampled. Holiday weekend use levels are important to document as they represent the maximum amount of use during the year at a recreation area. During Summer, 4 holiday days will be sampled, 3 during the Memorial Day Weekend, and 1 on Independence Day. During Fall, 3 days will be sampled over the Labor Day Weekend. During Winter, 3 days will be sampled for Presidents' Day weekend, and during Spring 2003 3 days will be sampled ~~over~~ during Easter ~~Weekend~~holiday period. Methods will be identical to those identified in Task 3. Information provided by this task will also be useful in SP-R8—Carrying Capacity.

Task 5—Recreation Activities

This task will estimate seasonal recreation activities occurring at each recreation site and major resource areas within the Study Area. This task also will estimate the number of visitors participating in various recreational activities. Activities for which use will be estimated will include those applicable categories used in the 5-year DPR Recreation Attitudes and Opinion Study. For example, urban park-related activities probably would not be included. Activity profile information will provide an instantaneous snapshot of the types and amounts of recreational activities occurring at each recreation site. Information from this task will be used to determine the total number of visitors participating in an activity and the percentage of the total number of visitors participating in an activity (percent basis).
The collection of these data over a representative sample of days at various locations will be used to accurately determine both total activity days and the average percentage of visitors participating in the various activities for the Study Area.

Task 6—Use Distribution

This task will provide a percent distribution of the amount of recreation use occurring within each primary project recreation area, such as Thermalito Forebay. Information from Tasks 2 through 5 will be used to generate this percentage. Once final RVDs and visits are calculated for each site (from Task 2), a total number of RVDs and visits can be determined for the entire Study Area. Once this has been determined, data from

each primary recreation area can then be compared to the total number of visits and RVDs to determine the percentage of total Study Area use occurring at each primary recreation area.

Task 7—Draft Final Report Preparation

This task will analyze and summarize the results of Tasks 1 through ~~7~~ 6 in a report and include a monitoring program. The Draft Final Report will describe the methods and results of the of each study tasks. The results of the study tasks will be presented in tabular and/or graphical form. In addition, the report will summarize recreation issues or conflicts identified as a result of completing the task.

6.0 Results and Products/Deliverables

Results

The study results will ~~help ensure that~~document existing recreation use levels and be used to develop a recreation plan for the study area. ~~are maintained or enhanced during the license period.~~ The results will be used as an input to SP-R8—Carrying Capacity, in particular, the physical site capacity component. The results will also be used for input into SP-R12—Projected Recreation Use; and SP-R14—Assess Regional Recreation and Barriers to Recreation, allowing comparison of use levels at the Study Area and other comparable recreation areas within the region. Finally, results will be used to help develop SP-R17—Recreation Needs Analysis.

Products/Deliverables

The following products will be developed for this study:

- Interim Report
- Draft Final Report

7.0 Coordination and Implementation Strategy

This study will require coordination with SP-R8, SP-R12, SP-R13, SP-R14, and SP-R17.

Issues, Concerns, Comments Tracking and/or Regulatory Compliance Requirements

The results of the study will address Issue Statement R1—adequacy of existing project recreation facilities, opportunities, and access to accommodate current use and future demand. This study will address the following specific Issues: RE 1, 2, 5-17, 19-39, 55, 56, 60, 64-83, 95, 96, 104, 105, 118-130, 132-145, 147, 150, and 151.

8.0 Study Schedule

Data collection: May 2002 through April 2003.
Data analysis and report writing: May through July 2003.

Interim Report due: November 2002.
Draft Final Report due: August 2003.

9.0 References

Guthrie, R., D. A. Penland, and E. Seagle. 1997. Lake Oroville State Recreation Area Recreational Use Study. ~~Unpublished~~ Contract report prepared for DWR, Chico State University, Chico, CA.

Rischbieter, D. C.2001. Lake Oroville State Recreation Area Summary of Attendance Data, January 1995-2000. Technical Information Record ND-97-1.

Attachment A

Current information on Existing Recreation Use

Existing Information:

1. DWR Recreation Plan for Lake Oroville State Recreation Area
2. DPR Resource Management Plan and General Development Plan, Lake Oroville State Recreation Area
3. City of Oroville General Plan and Land Use Maps
4. Butte County General Plan
5. Oroville Wildlife Area Management Plan
6. Statewide Comprehensive Outdoor Recreation Plan
7. FERC Form 80
8. DPR Public Opinion on Outdoor Recreation in California
9. A Study of Boater Recreation On Lake Berryessa, CA
10. Poe Hydroelectric Project Recreation Studies
11. Lake Oroville State Recreation Area Recreational Use Study
12. DPR Lake Oroville Resource Inventory
13. Lake Oroville State Recreation Area, Statewide Resources Management Plan
14. Lake Oroville Attendance Figures
15. Lake Oroville State Recreation Area Trail Map
16. Lake Oroville State Recreation Area (LOSRA) Attendance Data Summaries (1995-2000)
17. Taxable sales by County and City, 1999
18. Resident Annual Hunting and Fishing License Sales by County, 1987-1997
19. Total Sales, Items, and Units Reported by License Year 1990-1999
20. Economic Contribution of Deer, Pronghorn antelope, and Sage Grouse Hunting to Northeastern California and Implications to the Overall "Value" of Wildlife
21. California Horsemens' Association Trail-Riding Logs. T.R.A.P.
22. Aquatic Center Attendance Logs (see Wade Hough)
23. DPR statistical reports (annual since LOSRA)
24. LOSRA Recreation Plan
25. DPR and DWR Historical Recreation Plans (includes Bulletin 117-6)
26. FERC Orders and Correspondence Related to Oroville Facilities
27. National Whitewater Use Demand Studies (American Whitewater)
28. United States Geological Survey (USGS) Hydrologic Data by Water Year
29. Recreation Facilities Development Data at other DWR Facilities
30. US Sailing Statistical Data
31. Butte Sailing Club Turnouts
32. Sailing and Boating Safety Instruction Programs
33. ORAC Letters and Recommendations
34. 1st District Supervisor Beeler's Archives

35. enviro horse
36. ~~m~~Marin ~~c~~County
37. LOSRA trail use logs

Attachment B

Sample Existing Use Data Form

Preliminary Draft Lake Oroville Recreation Use Monitoring Form

Staff Name: _____ **Date:**_____

Weather Conditions:_____

Location (circle one):

1. Thermalito Afterbay
2. Thermalito North Forebay
3. Thermalito South Forebay
4. Spillway Boat Ramp/Overflow Camping
5. Diversion Pool
6. Low flow channel of the Feather River
7. Car-Top boat launch areas (specify location)_____
8. Lake Oroville Visitor Center
9. Dam/Overlook Area
10. Bidwell Canyon
11. Loafer Creek
12. Lime Saddle
13. Nelson Bar
14. Vinton Gulch
15. Dark Canyon
16. Foreman Creek
17. Stringtown
18. Enterprise Area
19. Craig Area
20. Bloomer Primitive
21. Goat Ranch
22. Clay Pit SRVA
23. Oroville Wildlife Area
24. Selected Primary Equestrian Trailheads (specify location)_____
25. Selected Primary Mountain Bike/Hiker Trailheads (specify location)_____
26. Shooting Area (Rabe Road)

TIME OF DAY	VEHICLES			ACTIVITIES OBSERVED									CAMPING
	Vehicles	With trailers	Parking Capacity Level	Picnic	Swim	Relax	Bike/ Hike	Hunt	Rest	Equest.	Windsurf	Waterski	Tents
830	4	8	Below	0	0	0	0	0	0	0	0	0	0
1330	0	0	At	0	0	0	0	0	0	0	0	0	0
1730	0	0	Exceeded	0	0	13	0	0	0	0	0	0	2

Other Comments: